PATENT ABSTRACTS OF JAPAN

(11)Publication number : 09-111906
(43)Date of publication of application : 28.04.1997

(51)Int.Cl. E04B 1/82
G10K 11/172

(21)Application number : 08-137443
(22)Date of filing : 08.05.1996

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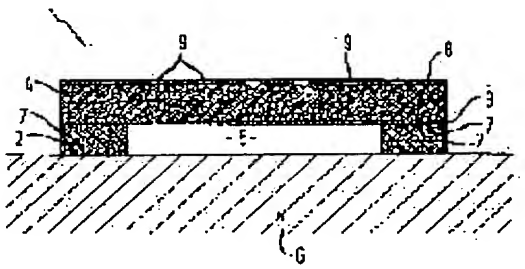
(30)Priority
Priority number : 95 19516819 Priority date : 08.05.1995 Priority country : DE

(54) SOUND-INSULATING DEVICE

(57)Abstract:
PROBLEM TO BE SOLVED: To obtain sound-insulating properties by installing a first sound- insulating element having a tabular sound-absorbing body arranged onto a surface partitioning a space by a space element and being used for low sound frequency and a second sound-insulating element having a porous sound- absorbing body and being used for high sound frequency.
SOLUTION: A hollow chamber 5 is formed by frame-shaped space elements 2 consisting of the plastic foam of polyurethane or a melamine resin, a tabular sound-absorbing body 3 composed of a plastic foil and a surface 4 partitioning a space. The porous sound-absorbing body 4 made up of the foamed substance of polyurethane or the melamine resin is mounted on the tabular sound-absorbing body 3, and a foil 8, in which holes 9 are formed to the surface on the sound side is fitted, thus forming a sound-insulating device 1. Accordingly, only a slight place is required in the space, and a sound-insulating effect can be acquired extending over a frequency range in broad width.



LEGAL STATUS

[Date of request for examination]	14.08.1996
[Date of sending the examiner's decision of rejection]	
[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]	
[Date of final disposal for application]	
[Patent number]	3046242
[Date of registration]	17.03.2000
[Number of appeal against examiner's decision of rejection]	

CLAIMS

[Claim(s)]
[Claim 1] It is attached in the field (6) into which space is divided. The first noise insulation element for low acoustic frequency, Have the second noise insulation element for high acoustic frequency, and the first noise insulation element has the tabular absorption-of-sound object (3) which kept spacing in the field (6) into which space is divided with a spacing element (2), and has been arranged. The second noise insulation element is noise insulating equipment characterized by having the absorption-of-sound object (4) of the porosity arranged on a tabular absorption-of-sound object (3).
[Claim 2] Noise insulating equipment according to claim 1 characterized by forming a spacing element (2) in the shape of a frame, and the tabular absorption-of-sound object (3) arranged on a spacing element (2) forming a hollow room (5) in respect of dividing space (6).
[Claim 3] Noise insulating equipment according to claim 1 or 2 characterized by consisting of an ingredient which a tabular absorption-of-sound object (3) tends to bend.
[Claim 4] Noise insulating equipment according to claim 3 characterized by being the plastics foil with which the tabular absorption-of-sound object (3) was closed.
[Claim 5] Noise insulating equipment according to claim 4 characterized by a plastics foil being a polyurethane foil.
[Claim 6] Claim 1 characterized by the thickness of a tabular absorption-of-sound object (3) being 20 micrometers thru/or 200 micrometers thru/or noise insulating equipment of one publication of five.
[Claim 7] Noise insulating equipment according to claim 6 characterized by the thickness of a tabular absorption-of-sound object (3) being 25 micrometers thru/or 50 micrometers.
[Claim 8] Claim 1 characterized by a spacing element (2) consisting of foaming matter thru/or noise insulating equipment of one publication of seven.
[Claim 9] Noise insulating equipment according to claim 8 characterized by a spacing element (2) consisting of open cell nature plastic foam especially polyurethane, or melamine resin form.
[Claim 10] Claim 1 characterized by the thickness of a spacing element (2) being about 100mm thru/or noise insulating equipment of one publication of nine.
[Claim 11] Claim 1 characterized by preparing covering (7) surrounding the flank of a spacing element (2) thru/or noise insulating equipment of one publication of 11.
[Claim 12] Noise insulating equipment according to claim 12 characterized by covering (7) consisting of a griddle.
[Claim 13] Claim 1 characterized by a porous absorption-of-sound object (4) consisting of foaming matter thru/or noise insulating equipment of one publication of 12.
[Claim 14] Noise insulating equipment according to claim 13 characterized by a porous absorption-of-sound object (4) consisting of the plastic foam especially polyurethane, or melamine resin form of open cell nature.

[Claim 15] Claim 1 characterized by forming the foil (8) which the hole opened in the field by the side of the sound of a tabular absorption-of-sound object (4) thru/or noise insulating equipment of one publication of 14.
[Claim 16] Noise insulating equipment according to claim 15 characterized by the foil (8) which the hole opened having the rate of 20 thru/or 80% of ****.
[Claim 17] Noise insulating equipment according to claim 16 characterized by the percentages of **** being 30 thru/or 50%.
[Claim 18] Claim 1 characterized by a porous absorption-of-sound object (4) being a rectangle mostly thru/or noise insulating equipment of one publication of 17.

[Claim 19] They are [the description and] claim 1 thru/or noise insulating equipment of one publication of 1-8 smoothly about the thickness of a porous absorption-of-sound object (4) being about 130mm.

[Translation done.]

* NOTICES *

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the noise insulating equipment attached in the field into which space is divided.
[0002]
[Description of the Prior Art] For example, since recording studio and sound space like a wind tunnel facility are insulated, the noise insulating equipment attached in the field into which space like a wall or head lining is divided is well-known.
[0003] For noise insulation, the troublesome wedge structure which has the wedge of about 60 thru/or 120cm length in the wall and head lining of the room which should insulate is used conventionally. This wedge mainly consisted of foaming matter, and has projected in the room by die length of about 1m according to the die length which becomes settled by acoustic wave length.
[0004] The noise insulating equipment of a flat configuration similarly attached in the wall and head lining of sound space is also well-known. Such flat noise insulating equipment has a porous acoustic material and the porous Helmholtz resonator.
[0005]
[Problem(s) to be Solved by the Invention] The technical problem of this invention is noise insulating equipment of the class mentioned to the beginning, needs only few locations for the interior of space, but is to offer what has an effect of intercepting noise over the frequency range of large width of face. Furthermore, this invention is easy and the thing which it is going to manufacture advantageously in cost about such equipment.
[0006]
[Means for Solving the Problem] In order to solve this technical problem, according to this invention, it is prepared in the field into which especially space is divided. It has the first noise insulation element for low acoustic frequency, and the second noise insulation element for high acoustic frequency. Noise insulating equipment equipped with the porous absorption-of-sound object with which the second noise insulation element has been arranged on this tabular absorption-of-sound object in the tabular absorption-of-sound object by which this first noise insulation element has been arranged with spacing to a wall surface with the spacing element is proposed. The wedge structure of taking a location is avoided by constituting noise insulating equipment like this invention. The noise insulating equipment by this invention consists of two noise insulation elements especially simply, and in that case, it can profit by the first noise insulation element in order to absorb the acoustic frequency of 500Hz or less. The second noise insulation element arranged on the first noise insulation element stops the acoustic frequency beyond it by friction loss and other energy losses. The noise insulating equipment by this invention is equipped with and and the description that especially that front face is smooth with that compact configuration. Loss of space is made small by this. When using it in a wind tunnel, the flow loss conventionally produced according to wedge structure is reduced by the configuration by this invention.
[0007] In the desirable configuration by this invention by claim 2, a spacing element is formed in the shape of a frame, and the tabular absorption-of-sound object arranged on this spacing element forms the hollow room in respect of a wall or head lining. The configuration of noise insulating equipment equipped with the hollow room which exists in the field side into which such space is divided stops low acoustic frequency good especially.
[0008] A tabular absorption-of-sound object consists of an ingredient which is easy to bend in the configuration from which this invention differs further. Thereby, noise insulation of a low sound frequency

range is improved further.
[0009] A tabular absorption-of-sound object consists of a closed plastics foil, especially a foil of polyurethane in the desirable configuration of this invention.
[0010] In the especially desirable configuration of this invention, the thickness of a tabular absorption-of-sound object is between 20 micrometers and 200 micrometers. It is especially made desirable for the thickness of a tabular absorption-of-sound object to be 25 micrometers thru/or 50 micrometers.
[0011] Furthermore in the desirable configuration of this invention, a spacing element consists of plastic foam of open cell nature like the foaming matter of the foaming matter especially polyurethane, or melamine resin.
[0012] In the configuration of this invention, the thickness of a spacing element is about 100mm.
[0013] Side-face covering of a spacing element is prepared in the desirable embodiment of this invention. This covering consists of a metal plate preferably.
[0014] Furthermore in the configuration of this invention, a porous absorption-of-sound object consists of plastic foam of open cell nature like the foaming matter of the foaming matter especially polyurethane, or melamine resin.
[0015] In the especially desirable configuration of this invention, the foil which the hole opened is formed in the field by the side of the sound of a porous absorption-of-sound object. The sound absorption characteristics to the high frequency of noise insulating equipment are not spoiled by such foil. It has become clear that the percentages of **** of the foil which the hole opened at that time are 20 thru/or 80% to the whole, and are desirable. [especially 30 thru/or 50% of]
[0016] In the embodiment from which this invention differs further, a porous absorption-of-sound object is a rectangle mostly, and has the thickness of about 130mm.
[0017]
[Example] This invention is explained to a detail below with reference to the example shown in a drawing. the cross section of the noise insulating equipment by this invention arranged in the field (a wall or head lining) 6 into which drawing 1 divides space -- rough -- however, a dimension -- faithful -- coming out -- there is nothing and it is shown. Noise insulating equipment 1 has two noise insulation elements.
[0018] The first noise insulation element for low acoustic frequency has the absorption-of-sound object 3 arranged on this spacing element 2 at the frame-like spacing element 2 list. The spacing element 2 is attached in the field 6 into which space is divided by sizing. The hollow room 5 which filled air with the tabular absorption-of-sound object 3 arranged (for example, sizing) and the field 6 into which space is divided is formed in the frame-like spacing element 2 and it. The spacing element 2 consists of plastic foam of the foaming matter, especially the foaming matter of open cell nature, for example, polyurethane, and melamine resin. the tabular absorption-of-sound object 3 -- bending -- being easy -- the matter -- it consists of a plastics foil preferably. It is stopped by constituting the first noise insulation element like this invention by the hollow room 5 which exists to the field 6 into which the tabular absorption-of-sound object 3 and space which the acoustic frequency of about 500Hz or less tends to bend are divided. As the spacing element 2 is shown in drawing, the side face is surrounded by covering 7. This covering 7 consists of a thin metal plate or a thin griddle etc., for example, the absorption-of-sound quality of the first noise insulation element is improved by this, and the partition to other noise insulating equipment which touches this is performed.
[0019] The second noise insulation element of the noise insulating equipment by this invention is attached directly, for example, sizing, on the tabular absorption-of-sound object 3, and includes the absorption-of-sound object 4 of the porosity which consists of foaming matter of the foaming matter especially polyurethane, or melamine resin. The porous absorption-of-sound object 4 equips the field by the side of sound with the foil 8 equipped with the hole 9 like illustration. The percentages of **** of the foil 8 which this hole opened are 20 thru/or 80% to the whole foil 8. As for especially this rate, it is desirable that they are especially 30 thru/or 50%.
[0020] In the second noise insulation element of the noise insulating equipment by this invention, the acoustic frequency of 500Hz or more is stopped by the porous friction loss or other energy losses in the absorption-of-sound object 4.
[0021] The thickness of the spacing element 2 is about 100mm, and it of the porous absorption-of-sound object 4 is about 130mm. Since 200 micrometers of plastics foils used as the tabular absorption-of-sound object 3 are the thickness of 50 micrometers preferably at the maximum, the whole noise insulating equipment has only the thickness of about 230mm. Therefore, as compared with wedge structure with a die length of about 1m, saving on clear space is obtained, and the sound space which should insulate can usually

save or constitute a bigger tooth space from having noise insulating equipment by this invention small beforehand. Applying the noise insulating equipment by this invention to a wind tunnel facility is also considered. In that case, since it can flow by the parallel flat front face to the field into which space is divided and loss can be made small, it is effective.

[0022] The noise insulating equipment by this invention stops sound over the frequency range of large width of face according to a series of measurement results hung up over below. In this the measurement of a series of, the acoustic absorptivity was defined by the German specification DIN 52212. The thickness of the absorption-of-sound object of the porosity which consists of BASOTEKUTO (Basotect) is [50 micrometers and the formed thickness of the hollow room 5 of the thickness of 130mm and the tabular absorption-of-sound object 3] 100mm. A control surface is 2 9.8m. The measured hollow room is 3 210m. It was the volume. Acoustic-absorptivity alphas measured when a frequency f was expressed with Hz It is shown in Table 1.

[0023]

[Table 1]

周波数Hz	100	125	160	200	250	315
α_s	0.64	0.86	0.93	1.31	1.34	1.29

周波数Hz	400	500	630	800	1000	1250
α_s	1.21	1.19	1.10	1.09	1.04	1.01

周波数Hz	1600	2000	2500	3150	4000	5000
α_s	1.03	1.04	1.05	1.09	1.12	1.15

[0024] It is acoustic-absorptivity alphas so that this measurement result may show. It is larger than 1 over a large frequency range (200Hz thru/or 5000Hz). An acoustic absorptivity falls to one or less for the first time below about 180Hz. This measurement result is Hz about a frequency at an axis of abscissa, and is acoustic-absorptivity alphas to an axis of ordinate. It was shown in expressed drawing 2 as a bar graph.

[Translation done.]

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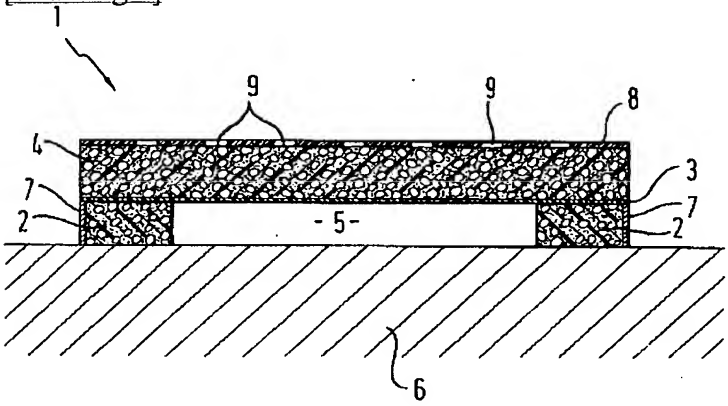
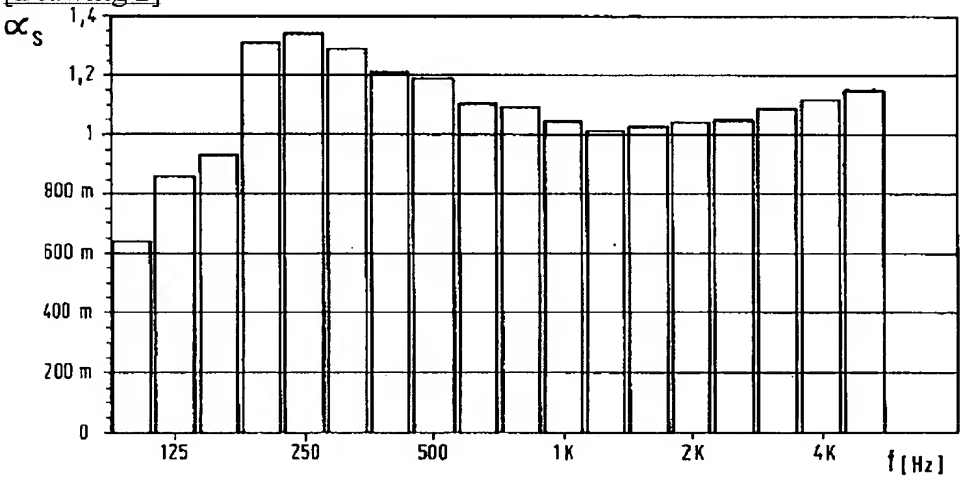
DRAWINGS

[Drawing 1]



[Drawing 2]



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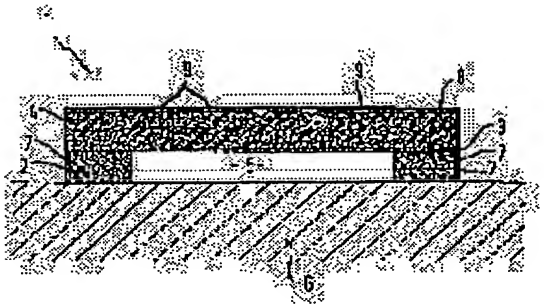
PROBLEM TO BE SOLVED: To obtain sound-insulating properties by installing a first sound- insulating element having a tabular sound-absorbing body arranged onto a surface partitioning a space by a space element and being used for low sound frequency and a second sound-insulating element having a porous sound-absorbing body and being used for high sound frequency.



SOLUTION: A hollow chamber 5 is formed by frame-shaped space elements 2 consisting of the plastic foam of polyurethane or a melamine resin, a tabular sound-absorbing body 3 composed of a plastic foil and a surface 4 partitioning a space. The porous sound-absorbing body 4 made up of the foamed substance of polyurethane or the melamine resin is mounted on the tabular sound-absorbing body 3, and a foil 8, in which holes 9 are formed to the surface on the sound side is fitted, thus forming a sound-insulating device 1. Accordingly, only a slight place is required in the space, and a sound-insulating effect can be acquired extending over a frequency range in broad width.

LEGAL STATUS
[Date of request for examination] 14.08.1996
[Date of sending the examiner's decision of rejection]
[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]
[Date of final disposal for application]
[Patent number] 3046242

(19)日本国特許庁（ＪＰ）　(12) **公開特許公報**（Ａ）　(11)特許出願公開番号

特開平9－111906

(43)公開日　平成９年(1997)４月28日

(51)Int.Cl.[6]	識別記号	庁内整理番号	Ｆ Ｉ		技術表示箇所
Ｅ０４Ｂ　1/82			Ｅ０４Ｂ　1/82	Ｃ	
Ｇ１０Ｋ　11/172			Ｇ１０Ｋ　11/16	Ｅ	

審査請求　有　　請求項の数19　ＦＤ　（全　５　頁）

(21)出願番号　特願平8－137443

(22)出願日　平成８年(1996)５月８日

(31)優先権主張番号　１９５１６８１９．４

(32)優先日　1995年５月８日

(33)優先権主張国　ドイツ（ＤＥ）

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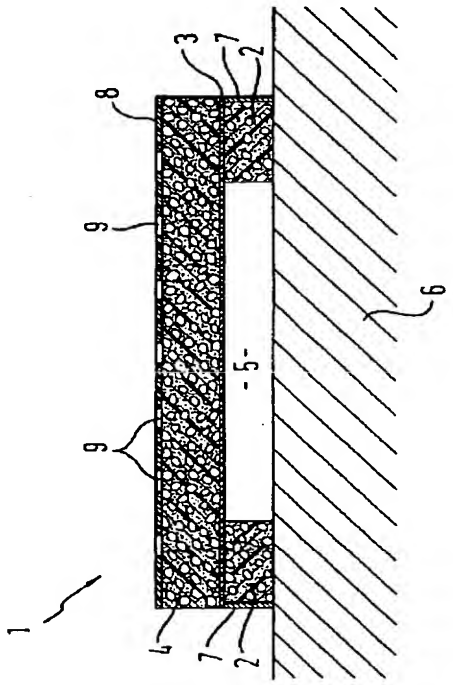
(54)【発明の名称】　遮音装置

(57)【要約】
【課題】空間の内部に僅かな場所しか必要とせず、広い幅の周波数範囲にわたって遮音効果のある遮音装置を提供する。
【解決手段】この発明による遮音装置１は遮音すべき空間の壁或いは天井６に配置された枠状の間隔要素２と、この間隔要素２の上に配置され壁６とで中空室５を形成する板状吸音体３を備える。吸音体３の上には多孔質の吸音体４が配置される。



【特許請求の範囲】
【請求項１】空間を仕切る面（６）に取り付けられ、低音響周波数用の第一の遮音要素と、高音響周波数用の第二の遮音要素とを備え、第一の遮音要素は間隔要素（２）によって空間を仕切る面（６）に間隔を置いて配置された板状吸音体（３）を有し、第二の遮音要素は板状吸音体（３）の上に配置された多孔質の吸音体（４）を有することを特徴とする遮音装置。
【請求項２】間隔要素（２）が枠状に形成され、間隔要素（２）の上に配置された板状吸音体（３）が空間を仕切る面（６）とで中空室（５）を形成することを特徴とする請求項１記載の遮音装置。
【請求項３】板状吸音体（３）が曲げ易い材料からなることを特徴とする請求項１又は２記載の遮音装置。
【請求項４】板状吸音体（３）が閉じられたプラスチック箔であることを特徴とする請求項３記載の遮音装置。
【請求項５】プラスチック箔がポリウレタン箔であることを特徴とする請求項４記載の遮音装置。
【請求項６】板状吸音体（３）の厚さが２０μｍ乃至２００μｍであることを特徴とする請求項１乃至５の１つに記載の遮音装置。
【請求項７】板状吸音体（３）の厚さが２５μｍ乃至５０μｍであることを特徴とする請求項６記載の遮音装置。
【請求項８】間隔要素（２）が発泡物質からなることを特徴とする請求項１乃至７の１つに記載の遮音装置。
【請求項９】間隔要素（２）が連続気泡性プラスチックフォーム、特にポリウレタン或いはメラミン樹脂フォームからなることを特徴とする請求項８記載の遮音装置。
【請求項１０】間隔要素（２）の厚さが約１００ｍｍであることを特徴とする請求項１乃至９の１つに記載の遮音装置。
【請求項１１】間隔要素（２）の側部を囲む被覆（７）が設けられることを特徴とする請求項１乃至１１の１つに記載の遮音装置。
【請求項１２】被覆（７）が鉄板からなることを特徴とする請求項１２記載の遮音装置。
【請求項１３】多孔質の吸音体（４）が発泡物質からなることを特徴とする請求項１乃至１２の１つに記載の遮音装置。
【請求項１４】多孔質の吸音体（４）が連続気泡性のプラスチックフォーム、特にポリウレタン或いはメラミン樹脂フォームからなることを特徴とする請求項１３記載の遮音装置。
【請求項１５】板状吸音体（４）の音響側の面に孔の明いた箔（８）が設けられていることを特徴とする請求項１乃至１４の１つに記載の遮音装置。
【請求項１６】孔の明いた箔（８）が２０乃至８０％の孔面の割合を持つことを特徴とする請求項１５記載の遮音装置。
【請求項１７】孔面の割合が３０乃至５０％であることを特徴とする請求項１６記載の遮音装置。
【請求項１８】多孔質の吸音体（４）がほぼ長方形であることを特徴とする請求項１乃至１７の１つに記載の遮音装置。
【請求項１９】多孔質の吸音体（４）の厚さが約１３０ｍｍであることを特徴とするする請求項１乃至１８の１つに記載の遮音装置。
【発明の詳細な説明】
【０００１】
【発明の属する技術分野】この発明は、空間を仕切る面に取り付けられる遮音装置に関する。
【０００２】
【従来の技術】例えば録音スタジオや風洞設備のような音響空間を遮音するために、壁や天井のような空間を仕切る面に取り付けられる遮音装置は公知である。
【０００３】遮音のために、従来は、遮音されるべき部屋の壁や天井に、約６０乃至１２０ｃｍ長の楔を持つ面倒な楔構造が使用されている。この楔は主として発泡物質からなり、音響波長により定まる長さに応じて約１ｍの長さで部屋の中に突き出ている。
【０００４】同様に音響空間の壁や天井に取り付けられる平形構成の遮音装置も公知である。このような平形の遮音装置は多孔質の吸音材とヘルムホルツ共鳴器とを有している。
【０００５】
【発明が解決しようとする課題】この発明の課題は、冒頭に挙げた種類の遮音装置で、空間の内部に僅かな場所しか必要とせず、広い幅の周波数範囲にわたって遮音効果のあるものを提供することにある。さらにこの発明はこのような装置を簡単かつコスト的に有利に製造しようとするものである。
【０００６】
【課題を解決するための手段】この課題を解決するために、この発明によれば、特に空間を仕切る面に設けられ、低音響周波数用の第一の遮音要素と高音響周波数用の第二の遮音要素とを備え、この第一の遮音要素は間隔要素によって壁面に対して間隔をもって配置された板状吸音体を、第二の遮音要素はこの板状吸音体の上に配置された多孔質の吸音体を備える遮音装置が提案される。遮音装置をこの発明のように構成することにより場所をとる楔構造が回避される。この発明による遮音装置は特に簡単に２つの遮音要素から構成され、その際第一の遮音要素は５００Ｈｚ以下の音響周波数を吸収するために役立てられる。第一の遮音要素の上に配置された第二の遮音要素はそれ以上の音響周波数を摩擦損失及び他のエネルギー損失によって抑える。この発明による遮音装置はその構成がコンパクトであること及び特にその表面が平滑であるという特徴を備えている。これによって空間の損失は小さくされる。風洞において使用する場合には

この発明による構成により従来楔構造により生じていた流れ損失が低減される。

【０００７】請求項２によるこの発明による好ましい構成においては、間隔要素が枠状に形成され、この間隔要素の上に配置される板状吸音体が壁或いは天井面とで中空室を形成している。このような空間を仕切る面側に存在する中空室を備えた遮音装置の構成は低音響周波数を特に良好に抑える。

【０００８】この発明のさらに異なる構成においては板状の吸音体は曲げ易い材料からなる。これにより低音響周波数範囲の遮音がさらに改善される。

【０００９】この発明の好ましい構成においては板状吸音体は閉じたプラスチック箔、特にポリウレタンの箔からなる。

【００１０】この発明の特に好ましい構成においては板状吸音体の厚さは２０μｍと２００μｍとの間にある。板状吸音体の厚さが２５μｍ乃至５０μｍであることが特に好ましいとされる。

【００１１】さらにこの発明の好ましい構成においては間隔要素は発泡物質、特にポリウレタン或いはメラミン樹脂の発泡物質のような連続気泡性のプラスチックフォームからなる。

【００１２】この発明の構成においては間隔要素の厚さは約１００ｍｍである。

【００１３】この発明の好ましい実施態様では間隔要素の側面被覆が設けられる。この被覆は好ましくは金属板からなる。

【００１４】さらにこの発明の構成においては多孔質の吸音体は発泡物質、特にポリウレタン或いはメラミン樹脂の発泡物質のような連続気泡性のプラスチックフォームからなる。

【００１５】この発明の特に好ましい構成においては多孔質の吸音体の音響側の面に孔の明いた箔が設けられる。このような箔により遮音装置の高周波数に対する吸音特性が損なわれることはない。その際孔の明いた箔の孔面の割合は全体に対して２０乃至８０％であり、特に３０乃至５０％が好ましいことが判明している。

【００１６】この発明のさらに異なる実施態様においては多孔質の吸音体はほぼ長方形であり、約１３０ｍｍの厚さを持つ。

【００１７】

【実施例】以下にこの発明を図面に示す実施例を参照して詳細に説明する。図１は、空間を仕切る面（壁又は天井）６に配置されたこの発明による遮音装置の断面を概略的に、しかし寸法に忠実にではなく示す。遮音装置１は２つの遮音要素を有する。

【００１８】低音響周波数用の第一の遮音要素は枠状の間隔要素２並びにこの間隔要素２の上に配置された吸音体３を有している。間隔要素２は空間を仕切る面６に例えば糊付けにより取り付けられている。枠状の間隔要素２及びそれに（例えば糊付けにより）配置された板状吸音体３と空間を仕切る面６とで空気を満たした中空室５が形成されている。間隔要素２は発泡物質、特に連続気泡性の発泡物質、例えばポリウレタン或いはメラミン樹脂のプラスチックフォームからなる。板状吸音体３は曲げ易い物質、好ましくはプラスチック箔からなる。第一の遮音要素をこの発明のように構成することにより約５００Ｈｚ以下の音響周波数が曲げ易い板状吸音体３及び空間を仕切る面６に対して存在する中空室５によって抑えられる。間隔要素２は、図に示すように、その側面が被覆７によって囲まれている。この被覆７は例えば薄い金属板或いは鉄板等からなり、これによって第一の遮音要素の吸音品質が改善され、これに接する他の遮音装置に対する仕切りが行われる。

【００１９】この発明による遮音装置の第二の遮音要素は板状吸音体３の上に直接例えば糊付けにより取り付けられ、発泡物質特にポリウレタン或いはメラミン樹脂の発泡物質からなる多孔質の吸音体４を含んでいる。音響側の面には、多孔質の吸音体４が図示のように孔９を備えた箔８を備えている。この孔の明いた箔８の孔面の割合は全体の箔８に対して２０乃至８０％である。この割合は特に３０乃至５０％であるのが特に好ましい。

【００２０】この発明による遮音装置の第二の遮音要素においては、５００Ｈｚ以上の音響周波数が多孔質の吸音体４における摩擦損失或いは他のエネルギー損失によって抑えられる。

【００２１】間隔要素２の厚さは約１００ｍｍであり、多孔質の吸音体４のそれは約１３０ｍｍである。板状吸音体３となるプラスチック箔は最大でも２００μｍ、好ましくは５０μｍの厚さであるので、全体の遮音装置は凡そ２３０ｍｍの厚さしか持っていない。従って通常約１ｍの長さの楔構造に比して、明らかな空間上の節約が得られ、遮音されるべき音響空間はこの発明による遮音装置を備えることでより大きなスペースを節約できる、もしくは予め小さく構成することができる。この発明による遮音装置を風洞設備に適用することも考えられる。その場合、空間を仕切る面に対して平行な平坦な表面により流れ損失を小さくすることができるので効果的である。

【００２２】この発明による遮音装置は以下に掲げる一連の測定結果に応じて広い幅の周波数範囲にわたって音響を抑える。この一連の測定においては吸音率はドイツ規格ＤＩＮ５２２１２によって定められた。バソテクト（Ｂａｓｏｔｅｃｔ）からなる多孔質の吸音体の厚さは１３０ｍｍ、板状吸音体３の厚さは５０μｍ、そして形成された中空室５の厚さは１００ｍｍである。検査面は９．８m^2 で、測定された中空室は２１０m^3 の容積であった。周波数ｆをＨｚで表したときに測定された吸音率α_sを表１に示す。

【００２３】

【表1】

周波数Hz	100	125	160	200	250	315
α_s	0.64	0.86	0.93	1.31	1.34	1.29

周波数Hz	400	500	630	800	1000	1250
α_s	1.21	1.19	1.10	1.09	1.04	1.01

周波数Hz	1600	2000	2500	3150	4000	5000
α_s	1.03	1.04	1.05	1.09	1.12	1.15

【0024】この測定結果からわかるように、吸音率α_sは200Hz乃至5000Hzの広い周波数範囲にわたって1より大きい。約180Hz以下で初めて吸音率は1以下に落ちる。この測定結果は、横軸に周波数をHzで、縦軸に吸音率α_sを表した図2に棒グラフとして示した。

【図面の簡単な説明】

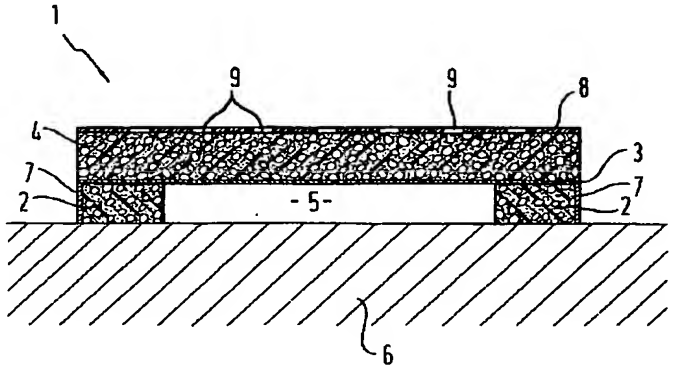
【図1】空間を仕切る面に配置されたこの発明による遮音装置の断面の概略図。

【図2】この発明による遮音装置で達成される吸音率と周波数との棒グラフ。

【符号の説明】

1　遮音装置
2　間隔要素
3　板状吸音体
4　多孔質吸音体
5　中空室
6　空間を仕切る面
7　被覆
8　孔の明いた箔
9　孔

【図1】



【図2】